

ABSTRACT

A method and an apparatus for producing hydrogen and a hydrogen production plant are provided. In the method, hydrogen production requiring high temperature is performed at low cost using energy of relatively low-temperature exhaust heat discharged from various types of heat processes, and the apparatus can readily start and suspend operation and whose running cost and equipment cost are reduced. These are achieved by a method for producing hydrogen and a hydrogen production apparatus and plant for realizing the method. The method includes the step of heating a fluid to turn into a high-pressure gas having a pressure at least five times as high as the internal pressure of the hydrogen production apparatus before reaction by heat exchange with a heat source; the step of instantaneously releasing the high-pressure gas into the hydrogen production apparatus to generate a shock wave; the step of feeding a raw material into the hydrogen production apparatus before the generation of the shock wave; and the step of impact-compressing the raw material by the shock wave to heat the raw material, thereby producing hydrogen.